Project Proposal Outline

Nothing Sweet About Diabetes

# Project Overview:

The project aims to predict the readmission of hospital inpatients with existing diabetes condition.

There are more than 34 million people in the United States with Diabetes, and it is the 7th leading cause of death [[1]](https://www.cdc.gov/diabetes/basics/quick-facts.html). The pre-existence of diabetes in hospitalized patients has been shown to have consequential significance on outcome [[2](https://academic.oup.com/jcem/article/87/3/978/2846522),[3]](https://care.diabetesjournals.org/content/21/2/246.short?casa_token=TIhle23Lm5wAAAAA:-94VesTdbDjmekrd2cIAEazjIURl1ys2vzPl09-IvnfbQn-ZpgLVSAbHbE3xFwjQj3l6WzHRGBtKbvIr). Despite this, there exists lack of standard protocols for diabetes care in non-ICU inpatients.

With this project we aim to find a relationship between blood glucose measurement and hospital readmission in order to determine if it can be used to improve overall patient care.

# Motivation:

* Diabetes is a common condition, and it impacts millions of families around the world. The number of diabetes patients in United States alone has more than doubled in the last 20 years. [1]
* The medical costs for patients with diabetes are twice as high as those without it.
* The medical cost combined with lost work and wages for diagnosed diabetes patients add to $327 billion a year in the United States.

# Objectives:

The project hypothesizes that individual blood glucose measurement at the time of hospital admission is related to reduction in readmission. Which potentially provides a basis to determine patient outcomes and cost of inpatient care.

# Dataset:

Diabetes 130-US hospitals for years 1999-2008 Data Set from UCI Repository: [[Link]](https://archive.ics.uci.edu/ml/datasets/diabetes+130-us+hospitals+for+years+1999-2008)

Graphical user interface, text, application, email

Description automatically generated

# Schedule/Plan:

Team Members: Parth Patel, Abhishek Biswas & Harshit Mehta

Each member of the team will take ownership for different aspects of the project however tasks will be divided amongst all three to provide equal learning opportunity. We will apply an agile model with two weekly standup calls and a task board. Harshit will be responsible for exploration, Parth will lead modeling, and Abhishek will own assessment and interpretation. We estimate a combined effort of 15 hours per week towards the completion of this project.

# Conclusion:

With the use of data and statistical techniques, we intend to find evidence which can improve outcomes for diabetes patients at hospitals and reduce suffering for individuals and families.